

**WHAT IS CLAIMED IS:**

1. A delivery system for delivery of an active molecule to a patient, said delivery system comprising a population of exopolysaccharide micelles, each said micelle defining a core for containing said active molecule.
2. The delivery system of claim 1, wherein said exopolysaccharide is produced by lactic acid bacteria.
3. The delivery system of claim 2, wherein said bacteria is selected from the group consisting of *Lactobacillus* strain R2C2, *Lactobacillus* strain Inix, *Lactobacillus* strain Es1, *Lactobacillus* strain K2, *Candida kefyr* and *Candida norvegensis*.
4. The delivery system of claim 1, wherein said active molecule is selected from the group consisting of DNA, RNA, protein, peptide, peptidomimetic, virus, bacteria, neutraceutical product and pharmaceutical agent.
5. The delivery system of claim 4, wherein said pharmaceutical agent is selected from the group consisting of analgesic, anesthetic, antibiotic, anticancer, anti-inflammatory, and antiviral.
6. The delivery system of claim 5, wherein said anticancer agent is selected from the group consisting of alkylating agents, alkyl sulfonates, aziridines, ethylenimines, methylamelamines, acetogenins, camptothecin, bryostatin, callystatin, CC-1065, cryptophycins, dolastatin; duocarmycin, eleutherobin, pancratistatin, sarcodictyin, spongistatin, nitrogen mustards, nitrosureas, antibiotics, anti-metabolites, folic acid analogues such as denopterin, methotrexate, pteropterin, trimetrexate, purine analogs, pyrimidine analogs, androgens, anti-adrenals, folic acid replenisher, aceglatone, aldophosphamide glycoside, aminolevulinic acid, amsacrine, bestrabucil, bisantrene, edatraxate, defofamine, demecolcine, diaziquone, elformithine, elliptinium acetate, epothilone, etoglucid, gallium nitrate, hydroxyurea, lentinan, ionidamine, maytansinoids, mitoguazone, mitoxantrone, mopidamol, nitracrine, pentostatin, phenamet, pirarubicin, podophyllinic acid, 2-ethylhydrazide, procarbazine, PSK.RTM., razoxane,

rhizoxin, sizofiran, spirogermanium, tenuazonic acid, triaziquone, 2, 2',2"-trichlorotriethylamine, trichothecenes, urethan, vindesine, dacarbazine, mannomustine, mitobronitol, mitolactol, pipobroman, gacytosine, arabinoside, thiotepa, taxanes, chlorambucil, gemcitabine, 6-thioguanine, mercaptopurine, methotrexate, platinum, vinblastine, platinum, etoposide, ifosfamide, mitomycin C, mitoxantrone, vincristine, vinorelbine, navelbin, novantrone, teniposide, daunomycin, aminopterin, xeloda, ibandronate, CPT-11, topoisomerase inhibitor RFS 2000, difluoromethylornithine, retinoic acid, capecitabine, anti-hormonal agents that act to regulate or inhibiting hormone action in hormonal dependent cancers.

7. The delivery system of claim 6, wherein said anti-hormonal agent is an anti-estrogens or an anti-androgens selected from the group consisting of flutamide, nilutamide, bicalutamide, leuprolide, and goserelin, and pharmaceutically acceptable salts, acids or derivatives thereof.

8. The delivery system of claim 6, wherein said alkylating agents is selected from the group consisting of thiotepa and cyclophosphamide (CYTOXAN™).

9. The delivery system of claim 6, wherein said alkyl sulfonates is selected from the group consisting of busulfan, improsulfan and piposulfan.

10. The delivery system of claim 6, wherein said aziridines is selected from the group consisting of benzodopa, carboquone, meturedopa, and uredopa.

11. The delivery system of claim 6, wherein said methylamelamines is selected from the group consisting of altretamine, triethylenemelamine, triethylenephosphoramide, triethylenethiophosphoramide and trimethylololomelamine.

12. The delivery system of claim 6, wherein said acetogenins is selected from the group consisting of bullatacin and bullatacinone.

13. The delivery system of claim 6, wherein said camptothecin is the synthetic analogue topotecan.

14. The delivery system of claim 6, wherein said CC-1065 is selected from the group consisting of adozelesin, carzelesin and bizelesin synthetic analogues thereof.
15. The delivery system of claim 6, wherein said cryptophycins is selected from the group consisting of cryptophycin 1 and cryptophycin 8.
16. The delivery system of claim 6, wherein said duocarmycin is selected from the group consisting of KW-2189 and CBI-TMI.
17. The delivery system of claim 6, wherein said nitrogen mustards is selected from the group consisting of chlorambucil, chlornaphazine, chlophosphamide, estramustine, ifosfamide, mechlorethamine, mechlorethamine oxide hydrochloride, melphalan, novembichin, phenesterine, prednimustine, trofosfamide and uracil mustard.
18. The delivery system of claim 6, wherein said nitrosureas is selected from the group consisting of carmustine, chlorozotocin, fotemustine, lomustine, nimustine, ranimustine.
19. The delivery system of claim 6, wherein said anti-metabolites is selected from methotrexate and 5-fluorouracil (5-FU).
20. The delivery system of claim 6, wherein said purine analogs is selected from the group consisting of fludarabine, 6-mercaptopurine, thiamiprime and thioguanine.
21. The delivery system of claim 6, wherein said pyrimidine analogs is selected from the group consisting of ancitabine, azacitidine, 6-azauridine, carmofur, cytarabine, dideoxyuridine, doxifluridine, enocitabine and floxuridine.
22. The delivery system of claim 6, wherein said androgens is selected from the group consisting of calusterone, dromostanolone propionate, epitostanol, mepitiostane, testolactone.
23. The delivery system of claim 6, wherein said anti-adrenals is selected from the group consisting of aminoglutethimide, mitotane and trilostane.
24. The delivery system of claim 5, wherein said antibiotics is selected from the group consisting of enediyne antibiotics, aclacinomysins,

actinomycin, authramycin, azaserine, bleomycins, cactinomycin, carabicin, carminomycin, carzinophilin, chromomycins, dactinomycin, daunorubicin, detorubicin, 6-diazo-5-oxo-L-norleucine, doxorubicin (including morpholino-doxorubicin, cyanomorpholino-doxorubicin, 2-pyrrolino-doxorubicin and deoxydoxorubicin), epirubicin, esorubicin, idarubicin, marcellomycin, mitomycins, mycophenolic acid, nogalamycin, olivomycins, peplomycin, poffiromycin, puromycin, quelamycin, rodoxorubicin, streptonigrin, streptozocin, tubercidin, ubenimex, zinostatin, zorubicin.

25. The delivery system of claim 24, wherein said enediyne antibiotics is selected from the group consisting of calicheamicin, dynemicin, esperamicin, neocarzinostatin chromophore and related chromoprotein enediyne antibiotic chromophores.

26. The delivery system of claim 25, wherein said calicheamicin is selected from the group consisting of calicheamicin  $\gamma_1$  and calicheamicin  $\theta_{11}$ .

27. The delivery system of claim 25, wherein said dynemicin is dynemicin A.

28. The delivery system of claim 1, wherein said micelles are having a diameter varying from about 50 nanometers to about 700 nanometers.

29. A pharmaceutical composition comprising the delivery system of any one of claims 1 to 28 in association with a pharmaceutically acceptable carrier.

30. An immunomodulator composition comprising an immunomodulating amount of the delivery system of any one of claims 1 to 28 in association with a pharmaceutically acceptable carrier.

31. A method for delivering an active molecule to a patient comprising the step of administering the composition of claim 29 to said patient.

32. The method of claim 31, wherein said administering can be from a route selected from the group consisting out local, parenteral, peritoneal, mucosal, dermal, epidermal, subcutaneous, transdermal, intramuscular, nasal, oral, topical, vaginal, rectal, intra-ocular, intravenous, intra-arterial and by inhalation.

33. A method for inducing immunomodulation in a patient comprising the step of administering the composition of claim 30 to said patient.

34. The method of claim 33, wherein said administering can be from a route selected from the group consisting out local, parenteral, peritoneal, mucosal, dermal, epidermal, subcutaneous, transdermal, intramuscular, nasal, oral, topical, vaginal, rectal, intra-ocular, intravenous, intra-arterial and by inhalation.

35. Use of the composition of claim 29 for delivering an active molecule to a patient.

36. The use as claimed in claim 35, wherein said delivering can be from a route selected from the group consisting out local, parenteral, peritoneal, mucosal, dermal, epidermal, subcutaneous, transdermal, intramuscular, nasal, oral, topical, vaginal, rectal, intra-ocular, intravenous, intra-arterial and by inhalation.

37. Use of the composition of claim 30 for inducing immunomodulation in a patient.

38. The use as claimed in claim 37, wherein said delivering can be from a route selected from the group consisting out local, parenteral, peritoneal, mucosal, dermal, epidermal, subcutaneous, transdermal, intramuscular, nasal, oral, topical, vaginal, rectal, intra-ocular, intravenous, intra-arterial and by inhalation.

39. A method for producing the delivery system of claim 1, comprising the step of incubating exopolysaccharide in a suitable medium for a time sufficient to form micelle.